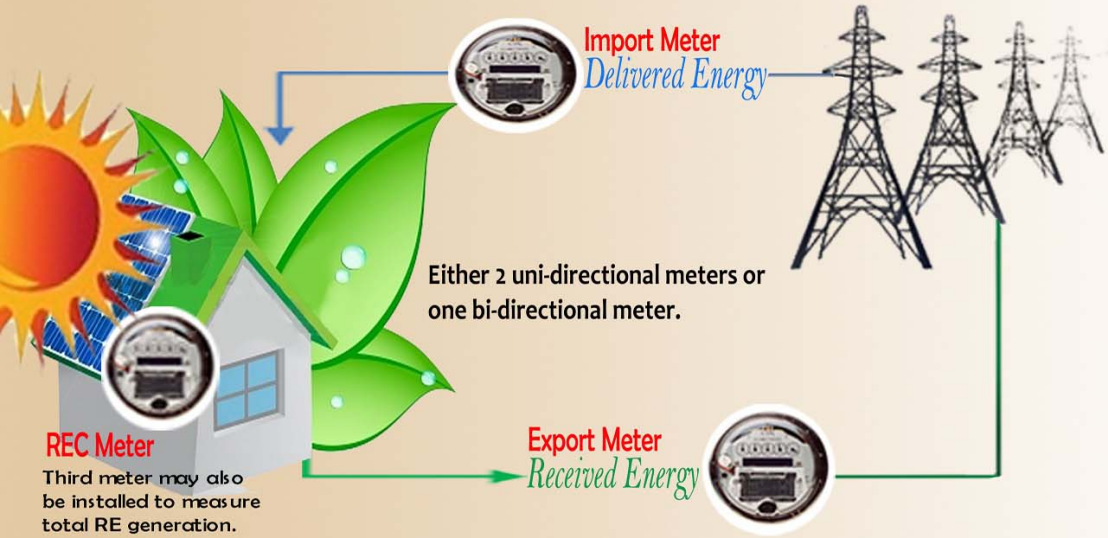
# NET METERING SETUP




¢f€ 2013-01-14

# RULES ENABLING THE NET-METERING PROGRAM FOR RENEWABLE ENERGY

# Outline

1. Introduction
2. Legal Basis
3. Scope, Applicability & Qualification
4. Interconnection Set-Up
5. Pricing Methodology
6. Net-Metering Charge
7. Billing Charge
8. Net-Metering Interconnection Standards
9. Net-Metering Agreement template

# Introduction

- **Resolution No. 9, Series of 2013 - A Resolution Adopting the Rules Enabling the Net-Metering Program for Renewable Energy**

- **Components:**
  - Rules Enabling the Net-Metering Program (Annex A)
  - Net-Metering Interconnection Standards (Annex A-1)
  - Net-Metering Agreement Template (Annex A-2)

- **Approved on May 27, 2013**

- **Effectivity on July 24, 2013**

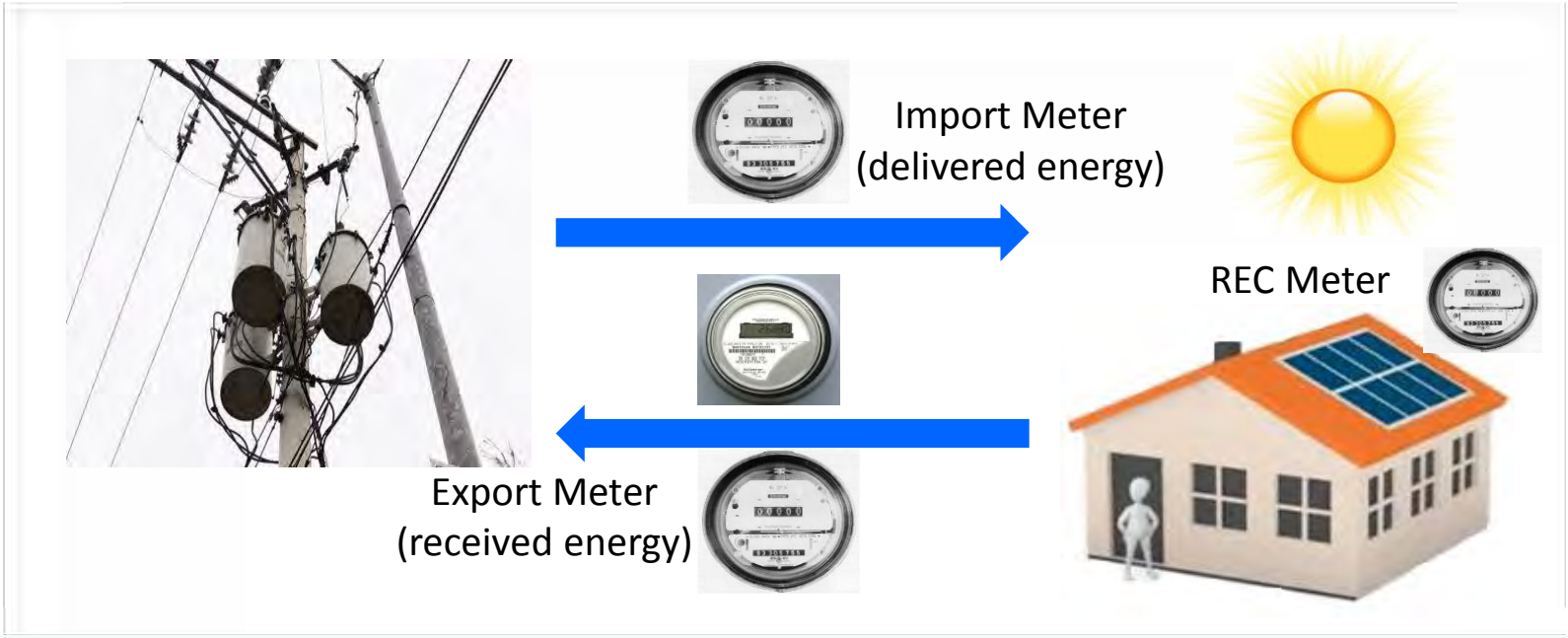
# Legal Basis

**Section 10 of R.A. 9513 and Section 7 of its IRR provides that the ERC, in consultation with NREB, shall establish the net-metering interconnection standards and pricing methodology.**

# Scope, Applicability & Qualification

- Applicable to on-grid systems.
- Only for installation of ≤ 100kW.
- For eligible RE Technologies such as wind, solar, biomass or biogas or other RE systems capable of being installed in the QE's premises.
- End-user should be in good credit standing in the payment of electric bills to the DU.
- The RE System must be compliant with the standards set in the PEC, PDC, DSOAR and the Net-Metering Interconnection Standards.

# Interconnection Set-Up




Either 2 uni-directional meters or one bi-directional meter. Third meter may also be installed to measure total RE generation.

# Pricing Methodology

- Interim pricing for export energy is the DU's monthly charge based on its blended generation cost.

- This cost shall be automatically included in the DU's total generation cost to be recovered from all its customers.

# Pricing Methodology

P5.6580




| Generation | Transmission | Distribution | End-User |
|---|---|---|---|
| | | SL: P0.4723<br>DSM: P1.9112<br>Subs: P0.1093<br>Tax: P0.9046<br>UC: P0.1188 | |

P5.6580 + P1.1839 + = P11.1106/kWh

# Net-Metering Charge

- Net-metering charge is equivalent to PhP/customer/month supply and metering rates; plus the ERC-approved PhP/kWh **metering rate** based on export energy.

- DUs may file for a different net-metering charge, if necessary.

# Billing Charge

Billing Charge:

PhP for import energy

Less: PhP export energy

PhP credited in previous month

**TOTAL**

If positive: QE shall pay this amount to DU

If negative: DU shall credit this amount to QE's next bill

# Net-Metering Interconnection Standards

## Annex A-1

# Interconnection Standards

- ✓ General Guidelines
- ✓ Application for Interconnection
- ✓ System Parameters
- ✓ System Protection
- ✓ Operations & Maintenance
- ✓ Metering
- ✓ Testing & Commissioning

# General Guidelines

- Design, installation, operations and maintenance shall be in consultation with the DU, since all specifications shall be of DU's standards.
- System requirements shall be met at the Connection Point.
- The DU shall only allow interconnection of RE facilities with up to 100kW capacity per QE account.
- The DU shall conduct inspections and shall remove the generation from DU system at any time due to maintenance, test, repair and emergency conditions.
- QE to be liable for any damages of the DU should the QE execute changes to the RE facilities without first informing the DUs.

# Application for Interconnection

QE to send a letter requesting DU for interconnection.

DU to provide information to QE.

QE to complete and file an application.

DU to ACKNOWLEDGE knowledge in 10 ness days receipt.

If yes: DU sh prov results of stu determine

DU, with QE to conduct on-site inspection.

- ✓ Pro forma agreements
- ✓ Application form
  - Description of proposed connection
  - Relevant Standard Planning Data
  - Other data required by DU
  - Completion date
- ✓ Technical requirements
- ✓ Specifications
- ✓ Listing of certified equipment
- ✓ Application fee information
- ✓ Applicable rate schedules
- ✓ Metering requirements

# System Parameters

- ✓ **Voltage Level** - *should be the same level as the DU with automatic method of disconnecting.*
- ✓ **Frequency** – *60 Hz with automatic method of disconnecting.*
- ✓ **Power Quality**
  - Limitation of DC injection – *not to inject current greater than 0.5% of the full load rated output current at connection point.*
  - Flicker severity – *not to exceed 1.0 unit for ST and 0.8 units for LT.*
  - Harmonics – *within limits in Sec. 3.2.4 of PDC*
- ✓ **Power Factor** – *not less than 85% lagging measured at the Connection Point.*

# System Protection

- ✓ **Synchronization** – *QE to provide synchronizing devices with typical limits in the NM Standards.*
- ✓ **Islanding** – *QE system should detect islanding and disconnect within 2 seconds from formation.*
- ✓ **Integration with DU's Distribution System Grounding** – *shall be grounded in accordance to PEC.*
- ✓ **Protective Control Devices**
  - Disconnect device – *visible for use by the DU within 10 feet from connection point.*
  - Protective relays – *protective relays provided in NM Standards*
  - Reclosing – *immediate disconnection from the DU system when the system is down.*

# Operations & Maintenance

- Facility should operate in parallel with the DU.
- QE must inform the DU if it is going to synchronize.
- If the DU system is down, the facility should automatically disconnect.
- QE to provide DU with contact numbers.
- QE shall maintain the facility in a safe manner as approved by the DU.

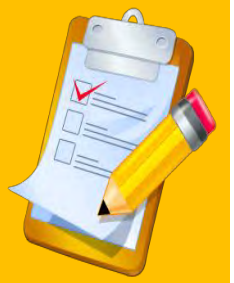
# Metering

- MSP shall own and shall be responsible for the operations and maintenance of the meter in accordance with Sec. 2.11 of DSOAR.
- QE to provide space for the metering facilities.
- Metering facilities shall be installed in an accessible and visible area for reading and testing of both QE and DU.

# Testing and Commissioning

- Commissioning test shall be conducted after the interconnection system is installed.
- DU has the right to witness the testing and commissioning.
- RE facility shall be equipped with whatever equipment is required to perform the test.

**Commissioning Test shall include the following:**



- ✓ Verification and inspections
- ✓ Production Test
  - Response to abnormal voltage
  - Response to abnormal frequency
  - Synchronization
- ✓ Unintentional islanding functionality test
- ✓ Cease-to-energize functionality test

# Net-Metering Agreement

## Annex A-2

# Net-Metering Agreement

- Parties:  DU and Qualified End-user

- Mirrors the provision in the Rules Enabling the Net-Metering Program (i.e. Compliance Standards, Interconnection Set-Up, DU Inspection, Meter Readings, Pricing and Other Charges).

- To be submitted to ERC, DOE & NREB within 5 days from execution.

- Deemed approved and effective upon submission to ERC.

# ISSUES

## Annex A-2

# ISSUES

1. DUs are not precluded under the Rules from paying our in cash its accumulated peso credit at the end of each calendar year.
2. That QE is an entity distinct from that of an SGF and IPP, thus:
   - It is not covered by the imposition of the universal charge required of SGF.
   - Shall apply for COC as QE.
3. Customer who intends to install beyond 100kW:
   - Must comply with the PDC and DU Standards
   - Must apply for COC as SGF
   - Must enter into PSA with a DU for ERC's approval

# THANK YOU

www.erc.gov.ph